



# Naval Medical Research and Development

## *Enterprise Laboratories*

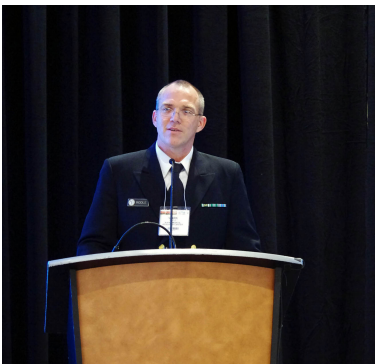
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## News Releases

### NMRC Researcher Shares Results from Traveler's Diarrhea Treatment Trial

Released: 12/2/2016

From Naval Medical Research Center Public Affairs



*Capt. Mark Riddle, NMRC presents results from Traveler's Diarrhea trial at the American Society of Tropical Medicine and Hygiene (ASTMH) annual meeting held November 13-17 in Atlanta, Georgia. (Photo by NMRC Public Affairs)*

SILVER SPRING, Md- The American Society of Tropical Medicine and Hygiene (ASTMH), annual meeting, Atlanta, Georgia, November 13-17, gave Naval Medical Research Center (NMRC) researcher Capt. Mark Riddle the opportunity to present the first results from a collaborative travelers' diarrhea treatment trial involving deployed U.S. and U.K. military troops.

Spanning from 2012-2015, the clinical trial was conducted in four different regions of the world – Afghanistan, Djibouti, Honduras, and Kenya, and focused on improving the treatment of travelers' diarrhea.

“We completed a randomized controlled trial to test three different antibiotic regimens to treat travelers' diarrhea among deployed military members,” said Riddle.

The main results showed that all three antibiotic regimens with loperamide significantly reduced the duration of illness which normally lasts about three to five days down to symptoms lasting about a half a day. Riddle explained that military travelers are very similar to civilian travelers, so the results have applicability to the general traveler population, as well.

Travelers' diarrhea is a common stomach and intestinal infection caused by bacteria ingested from infected food and drink. According to the Centers for Disease Control and Prevention

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(CDC), Travelers' diarrhea is "the most common travel-related illness – it can occur anywhere, but the highest-risk destinations are in most of Asia (except for Japan), as well as the Middle East, Africa, Mexico, and Central and South America."

"In the developing world, diarrhea is shown to be bacterial about 85 to 90 percent of the time, and it can't be diagnosed based on symptoms alone," said Riddle. "In the deployed troops the treatment focused on acute diarrhea illness, an infection affecting about 29 percent of troops per month on deployment to high risk regions. Because of its high frequency and impact, it's important to reduce the number of days lost to these infections."

In a historical review article, "Gastrointestinal Infections in Deployed Forces in the Middle East Theater: An Historical 60 Year Perspective," written by Riddle, Stephen J. Savarino, and John W. Sanders in 2015 stated, "despite the frequent occurrence, it is easy to dismiss these inconvenient gastrointestinal infections by soldier, provider, and commander when more serious concerns for life and limb, post-traumatic stress conditions, and significant wound infections are real and ever present. Diarrhea and dysentery do not kill, maim, or disfigure. However, lost duty days, decreased performance, and health care-utilization are probably underappreciated. Only about one in five cases of acute diarrhea are captured by current medical surveillance systems, leaving a large burden of disease that occurs 'under the surveillance radar'."

In addition to Riddle presenting the findings of this study at ASTMH, a Clinical Practice Guideline Symposium was held earlier in March 2016 where all branches of military service health care providers came together to see, review and discuss the results of this clinical trial, and how to better manage diarrheal disease in deployed service members. This symposium provided an opportunity to develop Department of Defense (DoD) clinical practice guidelines regarding diarrheal disease—the guidelines will come out in the Spring/Summer 2017 edition of the Military Medicine Journal supplement," said Riddle.

He went on to say, "the challenge now is to get people to change their practice. We need to change the way people are seeking care, but we also need to change the way providers are treating this illness when patient comes in with moderate to severe diarrhea."

Riddle has studied different aspects of diarrheal disease for over 15 years and acknowledges that certain aspects of the illness are only now starting to unfold, and can lead to further health issues later down the road.

"A significant percentage of people can go on to develop irritable bowel syndrome or reactive arthritis. We don't understand the exact mechanisms as to how these infections can then result in chronic illness, but there is a lot of evidence to suggest that it is a cause," said Riddle. Multiple research efforts are currently underway to discover what the exact mechanisms of these chronic health problems after travelers' diarrhea.

"Once the new guidelines are integrated into education and training doctrine, a substantial improvement in recovered lost-duty days to this most frequent deployment health infection will be realized," said Dr. Kevin Porter, Director, Infectious Diseases Directorate, NMRC.

"Dissemination, implementation, and monitoring guideline implementation are our next priorities," said Riddle. "Meetings like ASTMH are of critical importance not only for individuals to present their work, but to build the necessary collaborations within academia and the industry that will take these solutions forward," said Riddle.

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He continued, “we can do a lot in the Department of Defense (DoD), but the ultimate solutions take more than just the DoD – interfacing with potential industry counterparts that are studying this problem will help find a solution that much quicker and provide it to the warfighter.”

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